Test Procedure For
Determining Diurnal Emissions from Plastic Refueling Stations (aka “gas caddies”)
Category: RT06ST1

Purpose
To measure diurnal emissions from plastic refueling stations, including and excluding the hose/nozzle assembly.

General Test Conditions/Parameters
The hose/nozzle assembly is kept isolated by keeping the manual fuel hose valve handle at the bottom of the tank in the closed position, clamping or capping the hose, or otherwise preventing fuel from entering the hose assembly.
Since the caps can be tightened and hoses closed off or eliminated, vented emissions are not being measured or considered during these testing events. Emissions are assumed to be from permeation, and emission factors for permeation will be derived from the data provided.
All tests will be conducted in a SHED (Sealed Housing for Evaporative Determination) using CA Summer Temperature Profile (65°F - 105°F - 65°F) .
Record THC (Total Hydrocarbon) results generated by SHED-FID.
Ethanol impinger samples will be collected for each test to determine the accurate amount of ethanol emissions caused by ethanol content in the fuel. Ethanol impinger samples will be analyzed by MLD (South) Lab.
SHED THC concentrations will be corrected for ethanol concentrations and together will give the correct ROG (Reactive Organic Gas) concentrations.
Conduct Pre-Soak and Post-Soak tests using CaRFG3 fuel which has approximately 6% Ethanol (E6).
Repeat Pre-soak and Post-soak testing with California Phase II Certification E10 fuel.

Test Procedure For
Determining Diurnal Emissions from Plastic Refueling Stations (aka “gas caddies”)
Category: RT06ST1

Background		
Measure the background emissions of new refueling stations.		
Step #	**Procedure**	**Additional Comments**
1	Condition the refueling tank for 6 to 36 hours at 65ºF.	
2	Conduct a two-day Diurnal SHED test at 65ºF-105ºF-65ºF without fuel.	
3	Provide SHED ROG emissions data as background.	

Pre-Soak		
Measure the pre-use permeation emissions (tank only) from new refueling stations.		
Step #	**Procedure**	**Additional Comments**
1	Fill the refueling tank to 50% capacity with California Phase 3 Reformulated Gasoline (CaRFG3) summer fuel (tested at the lab).	Make sure that hose shut-off is in the off position, or that the hose does not contain fuel.
2	Condition the refueling tank for 6 to 36 hours at 65ºF.	
3	Conduct three, one-day Diurnal SHED tests at 65ºF-105ºF-65ºF temperature profile.	
4	Provide SHED ROG emissions data.	

Post-Soak		
Measure the post-use permeation emissions from in-use tanks (tank only).		
1	Drain and refuel the tank to 50% capacity with fresh CaRFG3 summer fuel (tested at the lab).	Make sure that hose shut-off is in the off position, or that the hose does not contain fuel.
2a	For untreated tanks, soak the refueling tank system for a minimum of 30 days at ambient temperature.	
2b	For treated tanks, soak the tank for 140 days.	
3	Drain and refuel the tank to 50% capacity with CaRFG3 (E6) summer fuel.	

4	Condition the refueling tank for 6 to 36 hours at 65ºF.	
5	Conduct three, one-day Diurnal SHED tests at 65ºF-105ºF-65ºF	
6	Provide SHED ROG emissions data.	

Post-Soak		
Measure the post-use permeation emissions INCLUDING filler hoses/nozzles.		
1	Drain and refuel the tank to 50% capacity with fresh CaRFG3 summer fuel (tested at the lab).	
2	Circulate the fuel through the fuel filler hose back into the fuel tank for 1 minute.	Lay the filler nozzle on the refueling tank frame below the fuel tank level to retain fuel in the fuel filler hose.
3	Soak the refueling tank system for 30 days at 86°F ± 10°F (conditioning filler hose).	
4	Drain and refuel the tank to 50% capacity with CaRFG3 summer fuel.	
5	Circulate the fuel through the fuel filler hose back into the fuel tank for 1 minute.	Lay the filler nozzle on the refueling tank frame below the fuel tank level to retain fuel in the fuel filler hose.
6	Condition the refueling tank system for 6 to 36 hours at 65ºF.	
7	Conduct three one-day Diurnal SHED Test at 65ºF-105ºF-65ºF.	
8	Provide SHED ROG emissions data.	